NASA Facts

National Aeronautics and
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Space Technology and Technology Development

Revitalizing Access to Space Through Government/Industry Teamwork

Making spaceflight less expensive and funneling advanced technology into the private sector are the two primary missions of NASA's Space Technology and Technology Development program. For the 21st century, NASA is designing small, low-cost spacecraft and a new launch vehicle to make space missions less costly and more efficient. In 1994, NASA ushered in an era of "smaller, faster, cheaper" spacecraft that can be built and launched quickly for a fraction of the cost of earlier spacecraft. At the same time, NASA is aggressively pursuing new technologies that work for American industry, such as advanced ceramics and composite materials that have applications for automobiles and aircraft.

Major Programs:

- Reusable Launch Vehicle Technology Program — X-33 and X-34 experimental launch vehicles in the next several years will demonstrate the capabilities and the technological development necessary for government and industry to set the course for a next-generation transportation system. The goal is a substantial reduction in the cost of lofting cargo to low-Earth orbit.
- Small Satellite Technology Initiative — Two pioneering spacecraft, "Lewis and Clark," are being built and will be launched within 24 months of program startup. Orbital operations will begin in 1996 for under $60M each. The satellites-each about the size of a console TV-will observe the Earth with unprecedented sensor technology.
- NASA Centers for the Commercial Development of Space — These 11 Centers, chosen by NASA in 1985, are based at universities and research institutions across the country and are allied with appropriate NASA Centers and affiliated industrial partners. They sponsor space-processing experiments carried aboard the Space Shuttle in the SPACEHAB commercially developed space research laboratory; primary, secondary and middeck experiments on other Shuttle flights; and commercial experiments carried aboard expendable launch vehicles.
- Advanced Communications Technology Satellite — Since launch in late 1993, this satellite is demonstrating, on a daily basis, advanced satellite communications technologies that will pave the way for 21st century commercial users and customers.

Current Activities

- SPACEHAB Experiments Success — Sponsored over 20 highly successful technological and biological experiments which flew aboard Discovery — Mission STS-63, in February — inside the SPACEHAB-3 commercially-developed space research laboratory. The next commercial SPACEHAB mission is scheduled for the Spring of 1996.
- Wake Shield Facility Flight Program — The next Office of Space Technology and Technology Development primary payload aboard the Space Shuttle Endeavour is the second flight of the Wake Shield Facility aboard STS-69. These experiments, aboard the free-flying Wake Shield, will attempt to establish a high-vacuum environment resulting in the growth of thin films which could lead to significant advances in next-generation semi-conductors for the electronics industry. A number of secondary experiments will also be flown on STS-69 aboard the Wake Shield facility itself; in the Shuttle's Cargo Bay; and in Endeavour's middeck.
- New Generation Launch Systems — Cooperative Agreements have been signed with four industry partners — McDonnell Douglas, Rockwell, Martin-Lockheed and Orbital Sciences Corporation — for the design and development of technology demonstrators leading to next-generation reusable launch vehicles.

- Small Business Innovation Research Awards — Selected over 400 small business research proposals for Phase I contract negotiations under this Agency program. Phase II contract awards, seed money for technological innovation, were made to 166 small, high-technology firms. The next selections will occur late in the Fall of 1995.

Budget

The fiscal year 1995 budget for this newly created space access and technology development program is $938 million. The budget request of $705.6 million in fiscal year 1996 supports the development of advanced aerospace and non-aerospace industries. The development of new and innovative technologies will lower the cost to develop, build and launch new spacecraft, increasing the ability of the U.S. to compete in the global market.

Partnerships

- Industry — the Agency's recently published “Agenda for Change” sets forth new guiding principles to insure that NASA's programs contribute directly to the nation's economy. This “new way of doing business” is designed to pursue industry partnerships aggressively with special emphasis on small, minority and disadvantaged companies across the country to take advantage of the unique resources they offer.

“To effectively use the technological, human, financial and other assets of NASA, we must carefully consider the marketplace and form partnerships with the private sector. The quality of life for all Americans stands to improve if we, the people of the largest civilian research and development agency, make smart decisions about technological investments and work effectively with private sector partners in order to boost American competitiveness, create jobs and strengthen the nation's economic base.”

NASA Administrator Daniel Goldin